

KOST, A. V.

Reactions of hydrazine derivatives. XI. Synthesis of  
 azine cyclohexane hydrazones, J. J. Grandberg, A. N.  
 Kost, and A. P. Terent'ev (State Univ. Moscow). *Zhur.*  
*Doklady Akad. Nauk SSSR*, 1956, 127, 1475; *C.A.* 51, 8729.  
 To 45 g. Na in 600 ml. EtOH was added 20 g. AcCH<sub>2</sub>CO<sub>2</sub>Et  
 and 198 g. cyclohexanone and after refluxing 30 hrs., 1.8 l.  
 H<sub>2</sub>O was added and the mixt. refluxed 3 hrs. and extd. with  
 Et<sub>2</sub>O, the ext. washed with 5% HCO<sub>2</sub>H and distd. yielding  
 cyclohexylideneacetone, bp 83-4°, n<sub>D</sub><sup>20</sup> 1.4759, d<sub>4</sub> 0.9378;  
 semicarbazone, m. 145°. This (41.4 g.) refluxed 3 hrs. in  
 26 ml. BuOH and 18.8 g. 98% N<sub>2</sub>H<sub>4</sub>·H<sub>2</sub>O, treated with 100  
 ml. HCl, evapd., treated with NH<sub>4</sub>OH and extd. with Et<sub>2</sub>O  
 gave 71.2% 3-methyl-3,5-pentamethylpyrazoline, bp 111-  
 12°, b<sub>10</sub> 104°, n<sub>D</sub><sup>20</sup> 98°, b<sub>10</sub> 95°, n<sub>D</sub><sup>20</sup> 1.4175, d<sub>4</sub> 0.9873; N-  
 phenylcarbamido deriv., m. 123.5°; Ac deriv., m. 86°.  
 This was identical with the pyrazoline from an azine of  
 Me<sub>2</sub>CO and cyclohexanone (cf. *C.A.* 51, 16248). The product  
 (24 g.) heated in an autoclave with 5 ml. 5% LiOH at  
 300° 3 hrs., then stirred 3 hrs. with 180 ml. 20 g. Cu(OAc)<sub>2</sub>  
 in 10% AcOH, and extd. with Et<sub>2</sub>O, the ext. sepd.  
 and vigorously stirred 3 hrs. with 50 ml. 85% HCO<sub>2</sub>H and  
 30 ml. 80% H<sub>2</sub>O, then alld. and the org. layer sepd. yielded  
 on distn. 80.4% 1-methyl-3,3-dialkylcyclopropane, which  
 after distn. from Na and treatment with KMnO<sub>4</sub> gave the  
 pure product, bp 107.4°, n<sub>D</sub><sup>20</sup> 1.4100, d<sub>4</sub> 0.7412. Similarly,  
 4-ethyl-5-propylpyrazoline gave 45% 3-ethyl-3-propylcyclo-  
 propane, bp 118.3-7.5°, b<sub>10</sub> 118.0° (after KMnO<sub>4</sub> treat-  
 ment), n<sub>D</sub><sup>20</sup> 1.4118, d<sub>4</sub> 0.7354 (n<sub>D</sub><sup>20</sup> and d<sub>4</sub> given for the fol-  
 lowing): 3-methyl-5,5-pentamethylpyrazoline gave  
 52.2% 2-methyl-1,1-pentamethylcyclopropane, b<sub>10</sub> 118.0°

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GRANDS, E. J., K...

P.H., T...

145.5-5.9°, 1.4589, 0.8867, and 5-methyl-3,5-dipropyl-  
 pyrazoline gave 70% 1-methyl-2-propylcyclopropane  
 bp. 152.9°-153.1°, 1.4310, 0.7621, reacting 40 g. methyl  
 oxide and 31.2 g. 90% NaH, H<sub>2</sub>O with 1 ml. 5% LiOH 4 hrs.  
 at 300° similarly gave 82.1% 1,1-dimethylcyclopropane,  
 bp. 52.1-2.4°, 1.3879, 0.6943. 3,4-dimethylene-3,5-tetra-  
 methylpiperazoline gave 88.8% 1,1-dimethylcyclo-  
 [0.1.3]acetone, bp. 31°, 1.4849, 0.9103. 4-Isopropyl-5-iso-  
 butylpyrazoline gave a low yield of 1-isopropyl-2-isobutyl-  
 cyclopropane, bp. 147.2-7.5°, 1.4177, 0.7608. G. M. K.

DM  
MAT

KOST, A.N.

BEREMAN, Boris Yefimovich; KOST, A.N., red.; SHPAK, Ye.G., tekhn.red.

[Industrial synthesis of chlorobenzene] Promyshlennyi sintez  
khlorbenzola. Moskva, Gos.nauchno-tekhn.izd-vo khim.lit-ry,  
1957. 143 p. (MIRA 10:12)

(Benzene)

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AUTHORS: Yershov, V. V.; Kost, A. N.; Terent'ev, A. P.

TITLE: Reactions of Hydrazine Derivatives. Part 12. Reaction of Beta-Dialkylamino-ketones with hydrazines (Reaktsii proizvodnykh gidrazina. XII. Vzaimodeystviye beta-dialkilaminoketonov s gidrazinom)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, No. 1, pp. 258-261 (U.S.S.R.)

ABSTRACT: The reaction of hydrazine derivatives was extended to a number of alkyl-aryl ketones for the purpose of investigating its rules and to obtain pyrazolones which cannot be obtained by any other method. This reaction was found to be easily adaptable for beta-amino-propiophenones which have various substituents in the nucleus and in the alpha-carbon atom in the side chain. In this case the reaction with hydrazine resulted in the formation of 3-aryl-4-alkylpyrazolines. The presence of alkyl- or alkoxy groups in the nucleus was not seen to affect the reaction process, the yields were high and decreased somewhat only in the presence of branching. The pyrazolines obtained from the hydrazine reaction, when exposed

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**AUTHORS:** Terentyev, A. P., and Kost, A. N.

**TITLE:** Syntheses with the Aid of Acrylonitrile. Part 30. Certain 1-Substitutes of Pyrrolidine and Piperidine (Sintezy s pomoshch'yu nitrila akrilovoy kisloty. XXX. Nekotorye 1-zameshchennye pirrolidina i piperidina)

**PERIODICAL:** Zhurnal Obshchey Khimii, 1957, Vol. 27, No. 1, pp.262-263 (U.S.S.R.)

**ABSTRACT:** Using secondary amines, acrylonitrile and 1,4- or 1,5-dibromides as a basis, the authors synthesized a number of 1-dialkylamino-propylpyrrolidines or piperidines. Cyanethylation of 2,4-dimethylpyrrole resulted in the formation of beta-(2,4-dimethylpyrrol-1)-propionitrile which when reduced over a skeletal Ni did not form the homologous diamine but propylamine and 2,4-dimethylpyrrolidine. 1-Substitutes of pyrrolidine or piperidine were obtained by reduction of beta-dialkylaminopropionitriles into homologous diamines.  
There are 6 references, of which 4 are Slavic.

**ASSOCIATION:** The Moscow State University (Moskovskiy Gosudarstvennyy Universitet)

**PRESENTED BY:**

**SUBMITTED:** February 6, 1956

**AVAILABLE:**

Card 1/1

H.N. Kosi

Dist: 4R13/AE3d

Reactions of hydrazide derivatives. XIII. Synthesis of pyrazolines by the Mannich reaction. A. N. Kosi and V. V. Babov (State Univ., Moscow). *Zh. Obshch. Khim.* 27, 1072-5 (1957); *Ch. U.S.S.R.* 31, 12837g. Pyrazolines can be synthesized conveniently by reaction of alkyl aryl ketones with paraformaldehyde (I) and hydrazine. Refluxing 60 g. AcPh, 20 g. I, 83 g. Me<sub>2</sub>NH.HCl and 80 ml. EtOH 2.5 hrs., dilg. with H<sub>2</sub>O, washing with Et<sub>2</sub>O, adding excess 40% NaOH, and extg. with Et<sub>2</sub>O gave after distn. of excess Me<sub>2</sub>NH and passage of dry HCl into the residue 85% *p*-MeC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>COCH<sub>2</sub>CH<sub>2</sub>NMe<sub>2</sub>.HCl (II), m. 151-3°. *p*-MeC<sub>6</sub>H<sub>4</sub>COCH<sub>2</sub>CH<sub>2</sub>NMe<sub>2</sub>.HCl (III), m. 179°, likewise was prepd. 66%. To 75 ml. N<sub>2</sub>H<sub>4</sub>, H<sub>2</sub>O and 50 ml. 40% NaOH and 100 g. MeOH was added at 50°. 108.5 g. II in 150 ml. MeOH; after refluxing 40 min., MeOH was distd. and the residue was extd. with Et<sub>2</sub>O yielding 78.5% 3-phenylpyrazoline, b. 130-1°, m. 44°. *N*-nitroso deriv., m. 164-5°. A 70.4% yield resulted from refluxing 60 g. PhAc, 20 g. I, 83 g. Me<sub>2</sub>NH.HCl, and 80 ml. EtOH 2.5 hrs., adding 100 ml. MeOH and 40 ml. H<sub>2</sub>O, and treating the mixt. with N<sub>2</sub>H<sub>4</sub>; refluxing 24 g. AcPh, 9 g. I, 28.4 g. NaH<sub>2</sub>PO<sub>4</sub> and 40 ml. EtOH 2 hrs. and treating the product with NaOH gave 28% yield. Similarly, III gave 72.8% 3-(*p*-tolyl)pyrazoline, m. 78-8°. *N*-nitroso deriv., m. 130°. Similarly was prepd. 61.1% 3-(2,5-dimethylphenyl)pyrazoline, b. 145-1°, n<sub>D</sub> 1.5943, d<sub>4</sub> 1.0658; *N*-nitroso deriv., m. 112°. Similarly was prepd. 55-68% 3-(*p*-tolyl)pyrazoline, m. 78-8°. *N*-nitroso deriv., m. 166°. *p*-Tolyl and 1 similarly gave 3-phenyl-4-ethylpyrazoline, b. 120°. *N*-nitroso deriv., m. 81°.

G. M. Kosch...

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 Reactions of hydrazine derivatives. XIV. New method of synthesis of 1-alkylhydrazones. A. N. Kost and V. V. Baboy (State Univ., Moscow). *Zhur. Obshch. Khim.* 27, 1722 (1957); *Chem. Abstr.* 51, 12887g; 52, 2812c. Refluxing 100 ml. Me<sub>2</sub>CO, 14 g. paraformaldehyde, and 32 g. Me<sub>2</sub>NH.HCl 7 hrs. gave after concn. and treatment with 40% NaOH and solid NaOH and extr. with Et<sub>2</sub>O, 45.4% 4-dimethylamino-2-butanone (I), bp 72-4°, d<sub>4</sub> 0.8763, n<sub>D</sub> 1.4240; methiodide, m. 167° and 261°. Refluxing 60 g. pinacolone, 50 g. Me<sub>2</sub>NH.HCl, 20 g. paraformaldehyde, and 1 ml. concd. HCl in 30 ml. EtOH 4.5 hrs. gave 77.4% 5-dimethylamino-2,2-dimethyl-3-pentanone (II), bp 74-5°, d<sub>4</sub> 0.8360, 1.4311; methiodide, m. 196°, rem. 260°. Similarly Et<sub>2</sub>O, paraformaldehyde, and Me<sub>2</sub>NH.HCl gave 68% 2-dimethylamino-3-methyl-2-pentanone (III), bp 69-81°, d<sub>4</sub> 0.8570, 1.4266; methiodide, m. 155°, rem. 258°. Cyclohexanone and Me<sub>2</sub>NH.HCl with paraformaldehyde in EtOH gave in 15 min. 60.3% 2-dimethylaminoethyl-1-cyclohexanone (IV), bp 98-9°, d<sub>4</sub> 0.9485, 1.4649; methiodide, m. 154° and 238°. I (10 g.) added to 10 ml. N<sub>2</sub>H<sub>4</sub>.H<sub>2</sub>O and treated with solid NaOH gave 68.3% hydrazones, bp 94-5°, d<sub>4</sub> 0.9170, 1.4789; concd. HCl converts the hydrazones to N<sub>2</sub>H<sub>4</sub>.HCl. To 60 ml. N<sub>2</sub>H<sub>4</sub>.H<sub>2</sub>O was added over 0.5 hr. 1.361 g. I in 140 ml. MeOH suspension; after stirring 0.5 hr. and refluxing 20 min., the mixt. was filtered and the ppt. extrd.

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with  $B_2O_3$ ; the filtrate after concn. under N was treated with solid NaOH and extrd. with  $B_2O_3$  yielding 67.2%  
*3-methylpyrrolidine*, bp 80-2°, d. 0.9653, 1.4732; with prolonged  
 extra. the yield rises to 30.4%; *N-phenylcarbamido deriv.*,  
 m. 110°. Similarly, II, MeI gave 48.4% *3-tert-butylpyrro-*  
*lidine*, b.p. 61°, d. 0.9148, 1.4875; *N-phenylcarbamido deriv.*, m.  
 61.5-62°; *N-benzoyl deriv.*, m. 82°. III, MeI similarly gave  
 42.1% *3-ethyl-4-methylpyrrolidine*, bp 66-7°, d. 0.9310, 1.4709;  
*N-1-methylcarbamido deriv.*, m. 87°. IV, MeI similarly  
 gave 58.1% *3,4-tetramethylpyrrolidine*, bp 104-5°, d. 0.9376,  
 1.6184; *N-phenylcarbamido deriv.*, m. 110°. *N-3-methyl*  
*deriv.*, m. 74.5°  
 G. M. Kosolov

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lptr: hE3d/hE2o(1)/hE4j

Reactions of hydrazine derivatives. XV. Cyanosylation of pyrazolines. A. N. Kost, V. V. Brahay, and S. I. Simakov (State Univ. Moscow). *Zhur. Obshch. Khim.* 27, 2014-17 (1957); cf. *C.A.* 50, 11320d, 51, 829a; 52, 2942c. — Refluxing 20 g. 3,5,5-trimethylpyrazolium-HCl and 20 g. Me<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>CN 1.25 hrs. gave after treatment with 40% NaOH and extr. with Et<sub>2</sub>O 47.6% 1-(2-cyanoethyl)-3,5,5-trimethylpyrazoline, b<sub>p</sub> 116-10°, n<sub>D</sub><sup>20</sup> 1.4718, d<sub>4</sub> 0.9608; run in xylene the reaction gave only 18% yield; the free pyrazoline fails to react. Similarly was prepd. 46% 1-(2-cyanoethyl)-4-ethyl-5-propylpyrazoline, b<sub>p</sub> 129°, 1.4739, 0.9609, and 28% 1-(2-cyanoethyl)-5-methyl-3,5-dihydropyrazolins, b<sub>p</sub> 122-3.5°, 1.4773, 0.9615. Freshly distd. methyl oxide (392 g.) treated with 0.5 g. Na in 10 ml. dry EtOH, followed dropwise by 63 g. CH<sub>2</sub>:CHCN at 8-10°, and stirred 0.5 hr. with cooling and 2 hrs. at room temp. gave after acidification with HCl 23%  $\gamma$ -acetyl- $\gamma$ -isopropenylbutyronitrile (Ia), b<sub>p</sub> 79-80°, 1.4592, 0.9572 (semicarbazone, m. 108°), and 33%  $\gamma$ -acetyl- $\gamma$ -isopropenylbutyronitrile (I), b<sub>p</sub> 88.5-90°, 1.4780, 0.9825 (semicarbazone, m. 164°). The former treated with EtONa and CH<sub>2</sub>:CHCN gave  $\gamma$ -acetyl- $\gamma$ -isopropenylpimelonitrile, m. 116°, also formed similarly from I. Addn. of 33.7 g. I to 16 g. N<sub>2</sub>H<sub>4</sub>·H<sub>2</sub>O in 20 ml. EtOH and refluxing 1.5 hrs. gave after distn. in N<sub>2</sub> 60% 1,3,5-trimethyl-4-(2-cyanoethyl)pyrazoline (II), b<sub>p</sub> 132-4°, 1.4920, 1.0201, rather unstable; methiodide, m. 182°. Similarly treated Ia yielded the hydrazone, b<sub>p</sub> 120°, 1.4978, 0.9807, which reacted vigorously with H<sub>2</sub>N, yielding benzalazine, m. 83°. Heating II with powd. Pt-KOH with traces of Ag gave N and 40% 1,1,3-trimethyl-2-(2-cyanoethyl)cyclopropane, b<sub>p</sub> 07-8.5°, 1.4814, 0.9291. G. M. Kosolapoff

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*Kost, A. N.*  
AUTHORS: Yudin, L. G., Kost, A. N., Berlin, Yu. A. 79-11-24/56  
Shipov, A. E.

TITLE: Reduction With Formic Acid and its Derivatives  
(Vostanovleniye murev'inoi kislotoi i yeye proizvodnyimi).  
VII. On the Reduction of Compounds With a Pyridine Nucleus  
(VII. O vostanovlenii soyedineniy, soderzhashchikh  
piridinovoye yadro).

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, Nr 11,  
pp. 3021-3026 (USSR)

ABSTRACT: The authors earlier showed that the process of reduction of the quinoline salts with formic acid (up to 1-alkyl-1,2,3,4-tetrahydroquinolines) is greatly accelerated upon addition of triethylamine. In the present work this observation was used in the reduction of a number of other compounds with pyridine-nucleus. Chlorides and bromides of N-alkylpyridine in the reduction with formic acid and sodium-formate chiefly formed 1-alkylpiperidines and only 10-15% 1-alkylpiperidines. In the experiment to reduce in this manner the iodides of N-ethyl- or N-butyl-pyridine only labile compounds were obtained. With triethylamine in the place of formate, however, the iodides and sulfates of N-alkylpyridine salts, like

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Reduction With Formic Acid and its Derivatives.

79-11-24/56

VII. On the Reduction of Compounds With a Pyridine Nucleus

the bromides and chlorides, are reduced. The period of reaction is in this connection shortened from 18-20 to 3-4 hours and the yields of 1-alkyl- $\Delta^3$ -piperidines increased to 25-35%. Thus the salts of N-alkylpyridine are fairly easily reduced, where a mixture of 1-alkylpiperidines and 1-alkylpiperidine forms. The latter are separated over their dibromides with subsequent splitting off. In the reduction of isoquinoline and its quaternary salts a hydrogenation of the pyridine-ring and the formation of 1,2,3,4-tetrahydroisoquinoline takes place. There are 15 references, 3 of which are Slavic.

ASSOCIATION: Moscow State University (Moskovskiy gosudarstvennyy universitet).

SUBMITTED: November 1, 1956

AVAILABLE: Library of Congress

Card 2/2 1. Formic acid - Derivatives 2. Pyridines - Derivatives

AUTHORS: Kost, A. N., Sagitullin, R. S. 79-12-31/43

TITLE: Reactions of the Hydrazine Derivates  
(Reaktsii proizvodnykh gidrazina).  
XVI. On the Effect of Benzylchloride on Acylhydrazones  
(O deystvii khloristogo benzila na atsilgidrazony).

PERIODICAL: Zhurnal Obshchey Khimii 1957, Vol. 27, Nr 12, pp. 3338-3342  
(USSR)

ABSTRACT: In a previous paper the synthesis of the benzylhydrazine by means of a reaction of the acetylhydrazone of acetone within sodium enolate with an ensuing action of benzylchloride and of a hydrolysis was described. The synthesis was further developed. Without the hydrolysis an intermediate product is obtained, the acetylbenzylhydrazone, which hydrolysed easily and formed benzylhydrazine. If a mixture of hydrazone and triethylamine (or pyridine) is assumed at the benzylisation instead of sodium enolate, then no benzylisation takes place in the absence of water. A presence of water leads to a weak reaction and to a compound with a melting point of 108° C. For the purpose of establishing the structure of this compound the acetylhydrazone of the cyclohexanone and the benzoylhydrazone of acetone was benzylisated. In the first instance a substance

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Reactions of the Hydrazine Derivates.

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XVI. On the Effect of Benzylchloride on Acylhydrazone.

with a melting point of  $108^{\circ}$  C., was obtained, analogous to the second instance a compound with a melting point of  $165^{\circ}$  C. On an action of benzylchloride on acetylhydrazine a product with the same melting point of  $103^{\circ}$  C was obtained, which transforms into a hydrochloric unsymmetrical dibenzylhydrazine at an acidous hydrolysis. This result finally clarifies the structure of the synthesised compounds. The compound melting at  $108^{\circ}$  C is a acetyl derivate of the unsymmetrical dibenzylhydrazine, where as the compound melting at  $165^{\circ}$  C is a benzoyl derivate of the latter. From this it appears, that the reaction of benzylchloride with acetylhydrazone may be used as a preparative method for the synthesis of unsymmetrical dibenzylhydrazine. There are 14 references, 2 of which are Slavic.

ASSOCIATION: Moscow State University; Moscow Polygraphic Institute  
(Moskovskiy gosudarstvennyy universitet i Moskovskiy poligraficheskiy institut).

SUBMITTED: November 22, 1956

1. Hydrazine derivatives-Quantitative analysis
2. Benzyl chlorides-Chemical reactions
3. Acylhydrazone-Chemical reactions

Card 2/2

AUTHORS: Grandberg, I. I., ~~Kost, A. N.~~,  
Terent'yev, A. P.

79-12-32/43

TITLE: Reactions of the Hydrazine Derivatives (Reaktsii proizvodnykh  
gidrazina).  
XVII. A New Synthesis of the  $\alpha$ -Methyltryptofol (XVII. Novyy  
sintez  $\alpha$ -metiltryptofola).

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, Nr 12, pp. 3342-3345(USSR)

ABSTRACT: Lipp published in 1889, that on the reaction of the phenyl-  
hydrazine with acetopropylalcohol 1 - phenyl - 3 - methyl -  
1,4,5,6 - tetrahydropyridazine is obtained very easily.  
Attempting to repeat Lipp's reactions, the authors obtained  
a product with the constants given by him, it proved, how-  
ever, to represent not tetrahydropyridazine, but the non-  
cyclic phenylhydrazone of the acetopropylalcohol. Subject  
to the action of hydrochloric acid this phenylhydrazone  
easily splits off phenylhydrazine. At a heating to 200°C  
it does not give up any water and does not transform into  
tetrahydropyridazine. In the presence of a catalytical amount  
of zinc chloride there results the  $\alpha$ -methyltryptofol. Its  
structure is supported by its conversion into the substituted

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Reactions of the Hydrazine Derivatives.  
XVII. A New Synthesis of the  $\alpha$ -Methyltryptofol

79-12-32/43

tryptamine by way of the bromide, that is to say into the 2-methyl-3-di-methyl aminoethylindole. The reactions described here do not only prove the structure of the phenylhydrazone, they also appear to constitute a new way for the synthesis of the  $\alpha$ -methyltryptofol, which up to now was obtained in a much more complicated way. The  $\alpha$ -methyltryptofol easily commutes into the acetate, which was characterized as pikrate, if it is subjected to the action of acetic acid anhydride (see the course of the reaction represented by six formulae). Besides, it was succeeded to synthesize the pyradizine by a conversion of the phenylhydrazine with methyl- $\gamma$ -chloro-propylketone. The pyradizine differing from phenylhydrazone easily furnished a pikrate. There are 2 references, 0 of which are Slavic.

ASSOCIATION: Moscow State University (Moskovskiy gosudarstvennyy universitet).

SUBMITTED: December 12, 1956

AVAILABLE: Library of Congress

Card 2/2 1. Hydrazine derivatives-Quantitative analysis  
2.  $\alpha$ -Methyltryptofol-Synthesis

reaction is the same. by the splitting of acetone... produced, which is identified as a semicarbazole whereas from pyracoline mesitylene oxide was produced, which was also transformed into semicarbazole. The ability of pyracoline to disrupt the CN binding corresponds to the analogous properties of its structural

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APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000825130011-0"

The Splitting of Parazoline Rings by Acylation.

PA - 2714

analogy: 8-aminacetone. The formation of dibenzoylhydrazine was also observed on the occasion of the treatment of 4-ethyl 5-propylpyracoline with benzoyl. This effect of chlorine benzoyl is not specific. Benzoyl pyrazoline resists the effect of chlorine benzoyl (at various conditions), but 1-benzoyl-3,5,5-trimethylpyrazoline splits easily and forms N,N'-dibenzoylhydrosine. The acid anhydrides acylate the pyrazolines without causing the ring open although it is known that the azines can be split by them. The aforementioned reactions are explained in detail including initial materials of products.

(3 groups of structural formulae, 3 citations from Slav publications)

ASSOCIATION: Moscow State University "M.V. LOMONOSOV"

PRESENTED BY: A.N. NESMEYANOV, Member of the Academy

SUBMITTED: 24.11.1956

AVAILABLE: Library of Congress

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KOSSUTH, S.

New stage of research on the cutting of coal in the USSR. p. 371. (PRZEGLAD  
GORNICZY, Vol. 9, No. 11, Nov. 1953, Stalinogrod, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec.  
1954, Uncl.

KOSSUTH, S.

"Fifty years of Przeład Gorniczy." p. 2. (Przeład Gorniczy, Vol. 10, no. 1., Jan 54, Stalinograd)

SO: Monthly List of East European Accessions, Vol 3 No 6 Library of Congress Jun 54 Uncl

KOSSUTH, E.

"Resolution of the Presidium of the Government Concerning the Development of Special Libraries in Establishments." Biuletyn Centr. p.1.  
(PRZEGLAD TECHNICZNY Vol. 75, no. 1, Jan. 1954 Warszawa, Poland)

SO: Monthly List of East European Accessions, LC, Vol. 3, no. 5, May 1954/Uncl.

KOSSUTH, S.

Geographical distribution of coal types in antlclinal seams of the Upper Silesian Basin. p.234  
(PRZEGLAD GORNICZY, Vol. 12, No. 5, May 1957, Stalinogrod, Poland)

SO: Monthly List of East European Accessions (FEAL) LC, Vol. 6, No. 9, Sept. 1957, Uncl.

PISTA, Jan, inz.; KOSSUTH, Stanislaw, docent, mgr., inz.

Drainage and degasification of carbon strata in the Ostrawa-Karwina district. Przegl gorn 17 no.5:294-299 My '61.

1. Redaktor dzialowy miesiecznika "Przeglad gorniczny" (for Kossuth).

KOSSUTH, Stanislaw, doc., mgr., inz.

"Outline of the history of mining on Polish territory"; a collective work. Reviewed by Stanislaw Kossuth. Przegl gorn 17 no.7/8:433-436 J1-Ag '61.

1. Redaktor dzialowy miesiecznika "Przegląd Gorniczy".

KOSSUTH, Stanislaw, doc. mgr inz.

Large drainage adits in the Upper Silesian coal basin.  
Przepl gorn 13 no. 78:460-465 JI-Ag '62.

KOSSUTH, Stanislaw, doc. mgr inz.

From the history of the drilling industry in Poland up to 1914.  
Przełgł gorn 19 no.1:52-56 Ja '63.

1. Główny Instytut Gornictwa, Katowice.

KOSSUTH, Stanislaw, doc. mgr inz.

Type s of power used in coal mining in the Upper Silesian  
Basin until 1914. Wiadom gorn 13 no.9:322-328 S '62.

KOSSUTH, Stanislaw

From the history of combating underground fires in collieries  
in the Upper Silesian Coal Basin. *Wisdom gorn* 12 no.6:207-212  
Je '61.

KOSSUTH, St., doc. mgr inz.

"Mining instructions for salt mines in the Krakow region  
from the 16th to the 18th centuries" by Antonina Keckowa.  
Reviewed by St. Kossuth. Przegl gorn. 19 no. 6:263-265  
Je '63.

KOSSUTH, Stanislaw, doc. mgr inz.;

First coal sorting and washing plants in the Upper Silesian  
Coal Basin. Przegl gorn 19 no.7/8:324-329 J1-Ag '63.

1. Glowny Instytut Gornictwa, Katowice.

KOSSUTH, Stanislaw

Outlines of the development of mining engineering in the collieries of the Upper Silesian Coal Basin until the middle of the 19th century. Wiadom gorn ll no. 11:405-409 N '60.

KOSSUTH, Stanislaw, doc. mgr inz.

From the history of the discovery of the Lvov-Volyn coal basin.  
Wiadom gorn 16 no.4:117-119 Ap '65.

PATSCH, Ferenc, okleveles banyamernok, fomernok, Kossuth-dijas;  
MOLNAR, Jenő, okleveles vegyeszmernok; RACZ, Daniel, okleveles  
olajmernok

Criticism of drilling fluids used in Hungary from the point  
of view of drilling technique and production. Bany lap 96  
no.10:710-716 0'63

1. Országos Koolaj - es Gazipari Troszt Dmantuli Koolajfurasi  
Uzem, Nagykanizsa (for Patsch). 2. Országos Koolaj - es Gazi-  
pari Troszt osztalyvezetoje, Nagykanizsa (for Racz).

Kossuthne-Svirczek, S.

Country : HUNGARY H-22  
 Category : Chemical Technology. Chemical Processing of  
 Solid Fossil Fuels  
 Abs. Jour : Ref Zhur-Khimiya, No 14, 1959, No 51017  
 Author : Glodi, A.; Hegedus, R.; Kossuthne-Svirczek, S.  
 Institute : -  
 Title : Differential Thermal Analysis of Coals  
 Orig Pub. : Kohasz. lapok. 1958, 13, No 9, 438-442  
 Abstract : Description of the constructed automatic  
 apparatus that was used in conducting differen-  
 tial thermal analyses of the Borshodskiy's  
 brown coals. Results of these analyses are  
 reviewed. -- S. Rosenfel'd.  
 Card: 1/1

H22

KOSSYURA, M.B.

Studies on motor-and reflexogenic functions of the colon, in normal state, in children. *Pediatrics*, Moskva no.2:49-57 Mr-Apr '50. (CML 19:2)

1. Of the Therapeutic Clinic and of the Roentgenological Division of the Institute of Pediatrics of the Academy of Medical Sciences (Director -- Prof. G.N.Speranskiy, Active Member of the Academy of Medical Sciences).

1. KOSSYURA, M.
2. USSR (600)
4. Solov'ev, A. V.
7. "Blood transfusion in children." B. A. Polianskiy, A. V. Solov'yev. Reviewed by M. Kossyura, *Pediatrics*, No. 5, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified

KOSSYURA, M.B., kandidat meditsinskikh nauk (Moskva)

Diagnosis and treatment of dysentery in children. Fel'd. i akush,  
21 no.6:7-10 Je '56. (MLRA 9:9)  
(DYSENTERY)

KOSSYURA, M., kandidat meditsinskikh nauk

Characteristics of functional conditions of the nervous system in children with gastrointestinal diseases. *Pediatrics* 39 no.5:28-35 S-O '56. (MLRA 10:1)

1. Iz 1-go klinicheskogo otdeleniya (sav. - prof. I.V.TSimbler) Institutopediatrii (dir. - chlen-korrespondent AMN SSSR prof. O.D.Sokolova-Ponomareva) AMN SSSR.

(GASTROINTESTINAL DISEASES, in infant and child, higher nervous funct. (Rus))

(CENTRAL NERVOUS SYSTEM, in various diseases, gastrointestinal dis. in child., higher nervous funct. (Rus))

KOSSYURA.M.B.

Examination of gastric secretion and the interoceptive connection of the stomach with the salivary glands in gastrointestinal diseases in children. Report no.1: Bykov-Kurtsin's method of investigation of gastric secretion. *Pediatrics* 39 no.6:3-10 N-D '56. (MIRA 10:2)

1. Iz 1-go klinicheskogo otdeleniya (zav. - prof. I.V.TSimbler) Instituta pediatrii AMN SSSR (dir. - chlen-korrespondent AMN SSSR prof. O.D.Sokolova-Ponomareva)

(GASTRIC JUICE,

secretion in gastrointestinal dis. in child., Bykov-Kurtsin's method of determ. (Rus))

(GASTROINTESTINAL DISEASES, in infant and child,

gastric secretion in, Bykov-Kurtsin's method of determ. (Rus))

*ROSSYUKA, M.B.*

ARUTYUNOV, V.Ya., prof.; BERKOVICH, I.M., doktor med.nauk; BUNIN, K.V., prof.  
VELIKORETSKIY, A.N., prof.; GAMBURG, R.L., doktor med.nauk; GLASKO,  
N.M.; ZVYAGINTSEVA, S.G., doktor med.nauk; IVENSKAYA, A.M., kand.med.  
nauk; KALUGINA, A.N, kand.med.nauk; YAMINSKAYA-PAVLOVA, Z.A., prof.  
KVATER, Ye.I., prof.; KOLEN'KO, A.B., prof.; ~~KOSSYUBA~~ *M.B.*, kand.  
med.nauk; KRAVTS, E.M., doktor med.nauk; KRISTMAN, V.I., kand.med.  
nauk; KRUZHKO, V.A., dotsent; LIKHACHNV, A.G., prof.; LUKOMSKIY, I.G.,  
prof.; MASHKOVSKIY, M.D., prof.; ROZENTAL', A.S., prof.; SEREYSKIY,  
M.Ya. [deceased], prof.; TURETSKIY, M.Ya., kand.med.nauk; KHESIN,  
Ye.Ye., dotsent; EMDINA, Kh.L., kand.med.nauk; SHABANOV, A.H., prof.;  
red.; BONDAR', Z.A., red.; ZAKHAROVA, A.I., tekhn.red.

[Medical handbook for feldshers] Meditsinskii spravochnik dlia  
fel'dsherov. Izd. 6-oe, perer. i dop. Moskva, Gos. izd-vo med.  
lit-ry, 1957. 899 p. (MIRA 10:12)  
(MEDICINE--HANDBOOKS, MANUALS, ETC.)

ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ  
М.Б.

Studying gastric secretion and the interoceptive relation between  
the stomach and salivary glands in diseases of the alimentary canal  
in older children. Paediatria no.5:39-46 My '57. (HIRA 10:10)

И. Из 1-го клинического отделения (зав. - проф. И.И. Писинер)  
Института педиатрии АМН СССР (dir. - член-корреспондент АМН СССР  
проф. С.У. Пономарева-Сидорова)  
(STOMACH--FUNCTIONS) (SALIVARY GLANDS)  
(ALIMENTARY CANAL--DISEASES)

KOSSYURA, M.B., kand.med.nauk

Glycogenesis. Vop.okh.mat. i det. 4 no.2:68-71 Mr-Ap '59.  
(MIRA 12:5)

1. Iz 1-go klinicheskogo otdeleniya (zav. - prof. I.V.TSimbler)  
Instituta pediatrii AMN SSSR (dir. - chlen-korrespondent AMN  
SSSR prof. O.D.Sokolova-Ponomareva),  
(GLYCOGENOSIS)

KOSSYURA, M.B. i.med.nauk

Mechanism of interoceptive influences from the stomach on the salivary glands. Vop.okh.mat. 1 det. 4 no.5:46-50 S-0 '59. (MIRA 13:1)

1. Iz 1-go klinicheskogo otdeleniya (zav. - prof. I.V. Simbler)  
Instituta pediatrii AMN SSSR (dir. - chlen-korrespondent AMN SSSR  
prof. O.D. Sokolova-Ponomareva).  
(STOMACH--SECRETIONS) (SALIVARY GLANDS)

( KOSYURA, M.B., kand.med.nauk

Current status of the problem of celiac disease and cystic  
fibrosis of the pancreas. *Pediatrics* 33 no.9:82-88 S '60.  
(MIRA 13:12)

1. Iz 1-go klinicheskogo otdeleniya (zav. - prof. I.V. TSimbler)  
Instituta pediatrii AMN SSSR (dir. - chlen-korrespondent AMN  
SSSR prof. O.D. Sokolova-Ponomareva).  
(PANCREAS--DISEASES) (SPRUE)

KOSSYURA, M.B., kand.med.nauk

Case of cystic fibrosis of the pancreas. Vop. okh. mat. i det. 6  
no.4:90-93 Ap '61. (MIRA 14:6)

1. Iz kliniki rannego detskogo vozrasta (zav. - prof. I.V.TSimbler)  
Instituta pediatrii AMN SSSR (dir. - deystvitel'nyy chlen AMN  
SSSR prof. O.D.Sokolova-Ponomareva).  
(PANCREAS--DISEASES)

KOSSYURA, M.B., kand.med.nauk

Mechanism of the development of persistent anorexia in children.  
Pediatria 41 no.5:58-64 My '62. (MIRA 15:5)

1. Iz kliniki patologii rannego detskogo vozrasta (zav. - prof.  
I.V. TSimbler) Instituta pediatrii AMN SSSR (dir. - dotsent  
M.Ya. Studenikin).

(ANOREXIA)

BERKOVICH, I.M., doktor med. nauk [deceased]; VOLOTOV, A.N., dots.; VALENTINOVICH, A.A., dots.; DOMBROVSKAYA, Yu.F., prof.; KOSSYURA, M.B., kand. med.nauk; KIFER, Ye.L., kand. med. nauk; MASLOV, M.S., prof. [deceased]; POD"YAPOL'SKAYA, V.N., prof.; SEMENOVA, N.Ye., zasl. vrach RSFSR; KHOKHOL, Ye.N., prof.; ZHUKOVSKIY, M.A., red.; KOROLEV, A.V., tekhn. red.

[Multivolume manual on pediatrics] Mnogotomnoe rukovodstvo po pediatrii. Moskva, Medgiz. Vol.4. [Diseases of the digestive tract. Diseases of the liver and skin. Vitamins and vitamin deficiency diseases] Zabolevaniia pishchevritel'nogo trakta. Bolezni pochk i kozhi. Vitaminy i bolezni vitaminnoi nedostatochnosti. Red. toma E.N.Khokhol. 1963. 721 p. (MIRA 17:2)

1. Deystvitel'nyy chlen AMN SSSR (for Dombrovskaya, Maslov).
2. Chlen-korrespondent AMN SSSR (for Pod"yapol'skaya, Khokhol).



KOSSYURA, M.B., kand. med. nauk

Method of examining gastric secretion in very young children.  
Trudy Tadzh. med. inst. 50:133-138 '61. (MIRA 17:8)

1. Iz I klinicheskogo otdeleniya zav. prof. O.V. Simbler)  
Instituta pediatrii AMN SSSR (dir. - M.Ya. Studenikin) Tadzhikskogo  
gosudarstvennogo meditsinskogo Instituta imeni Abdali Ibr-Sino.

MATUSKOV, S.I., dotsent; KOSSYURA\_POLEVAYA, N.S.

Dispensary care for patients with skin diseases at the October  
Revolution Machine Construction Plant in Odessa. Sov. med. 25  
no.9:82-85 S '61. (MIRA 15:1)

1. Iz kafedry kozhno-venericheskikh bolezney (zav. - prof. M.B.  
Borzov) Odesskogo meditsinskogo instituta imeni N.I.Pirogova (dir.-  
zasluzhennyy deyatel' nauki prof. I.Ya.Deyneka).  
(ODESSA\_MACHINERY INDUSTRY WORKERS\_MEDICAL CARE)  
(SKIN\_DISEASES)

ACC NR: AP7007069

SOURCE CODE: UR/0004/66/000/011/0001/0001

AUTHOR: Kovalevskiy, V.; Kosyy, G.

ORG: none

TITLE: Water as a calculator 'hydrointegrator'

SOURCE: Znaniye-sila, no. 11, 1966, 1

TOPIC TAGS: thermodynamics, temperature instrument

SUB CODE: 14, 20

ABSTRACT: The article describes a so-called "hydrointegrator" represented by an array of glass tubes in which the water level rises or falls depending on temperature. Such a device makes it possible to simulate within a few minutes the hours-long process of the setting of concrete and, thus, to determine in advance whether it is feasible to lay concrete in cases where the weather bulletin forecasts a sharp drop in temperature on the following day, so as to avoid any possible "freezing" of concrete. The hydrointegrator can also be used for such purposes as the design and calculation of blast-furnace linings and the processes of rubber vulcanization, the laying of foundations in permafrost regions, and the construction of irrigation channels in desert regions. This device was conceived by Vladimir Sergeyevich Luk'yanov on the theory that the flow of heat

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ACC NR: AP7007069  
"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R000825130011-0"

is something like the flow of water. The process of the cooling of a glass of hot tea is as follows: the heat is removed by air from the walls of the glass so that they cook, but at the same time they receive new heat from the central layers of water; if this glass of tea is divided into 10 layers, it is conditionally possible to analyze the flow of heat from the inner to the outer layers; each layer of this kind corresponds to a separate water tube in the hydrointegrator. These tubes are linked by rubber hose. Thus, the intricate process of heat transfer can be quite satisfactorily simulated in the hydrointegrator, even as regards heat transfer in nuclear power reactors. This type of visual model-simulator is even better than a motion picture camera. Orig. art. has: 1 figure.  
[JPRS: 39,658]

Card 2/2

KUZUB, L.G.; KUZUB, V.S.; KOSSYY, G.G.

Corrosion of steels in nitric acid of various concentration  
in the presence of hologen ions. Zhur. prikl. khim. 38 no.10:  
2217-2222 0 '65. (MIRA 18:12)

1. Submitted April 27, 1963.

ACCESSION NR: AP4038563

S/0080/64/037/005/1063/1066

AUTHOR: Kuzub, V. S.; Kossy\*y, G. G.

TITLE: Intergranular corrosion of stainless steel in concentrated nitric acid.  
Communication II.

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 5, 1964, 1063-1066

TOPIC TAGS: stainless steel corrosion, corrosion, 1Kh18N9T, Kh17, double layer capacity, intergranular corrosion, true surface area, surface area measurement

ABSTRACT: It was shown that the rate of corrosion of chromium and chromiumnickel stainless steels in concentrated nitric acid increases with time and the corrosive destruction is intergranular in nature. It was thought, that such a relationship of the rate of corrosion may result from the increase of the surface area due to the intergranular corrosion or due to the accumulation of hexivalent chromium, traces of which in the nitric acid accelerate the corrosion. The purpose of the present article was to verify this through the investigation of the true surface area of electrodes made of 1Kh18N9T and Kh17 steels. This was done by the differential measurements of the capacity of the double layer. Measurements were made

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ACCESSION NR: AP4038563

by means of an a.c. bridge. The capacity of the double layer was measured in 0.1 N  $K_2SO_4$  solution. The oxygen was removed from the solution by passing clean nitrogen through it. The capacity was taken after 10 min. of immersion into the solution. All measurements were made at room temperature at 400 cps frequency. It was found that the capacitance of annealed steel electrodes increases greatly upon 48 hour etching in 98.9 % nitric acid. Under these conditions a definite intergranular corrosion has been detected. The increase of the true surface area in the intergranular corrosion process of steel Khl8N9T is approximately 2.4 times that of Khl7 steel. This fact is apparently associated with the larger grain size of the latter steel. Experimental measurements of the capacity of double layers were conducted with the participation of A. N. Zhukov. Orig. art. has: 3 tables and 2 figures.

ASSOCIATION: Lisichanskiy filial gosudarstvennogo nauchnoissledovatel'skogo i proyektного instituta azotnoy promyshlennosti i produktov organicheskogo sinteza (Lisichansk Branch of the State Scientific Research Planning Institute of the Nitrogen Industry and Products of Organic Synthesis)

Card 2/3

ACCESSION NR: AP4038563

SUBMITTED: 24Jul62

SUB CODE: MM

NO REF SOV: 007

ENCL: 00

OTHER: 002

Card

3/3

L 54976-65 EWT(m)/EPH(c)/EWA(a)/I/ENP(t)/ENP(b)/EWA(c) IJP(e) JD/HW/JG/M  
 S/DB65/63/001/001/0042/0047  
 620.196

ACCESSION NR: AP5007625

AUTHOR: Kossyy, G. G.; Kuzub, V. S.

TITLE: Electrochemical mechanism of intercrystalline corrosion of stainless steels and methods of its determination

SOURCE: Zashchita metallov, v. 1, no. 1, 1965, 42-47

TOPIC TAGS: steel corrosion, stainless steel, electrolytic corrosion, intercrystalline corrosion, chromium containing alloy, steel passivity

ABSTRACT: On the basis of data in the literature on the anodic behavior of iron-chromium alloys and various stainless steels, it is shown that intercrystalline corrosion caused by the depletion of chromium at the grain boundaries can occur in sulfuric acid in the range of 0.0 to +0.3 V and should reach a maximum at approximately +0.15 V. The occurrence of intercrystalline corrosion does not require a drop in the chromium content of the grain boundaries below the first stability threshold (13%). In the region of transpassivation and at higher positive potentials, intercrystalline corrosion is not related to the depletion

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ACCESSION NR: AP5007625

of chromium at the grain boundaries. To determine the tendency of steel toward intercrystalline corrosion, it is necessary to test a polished section in 5-10% sulfuric acid at a potential of +0.15 V maintained by a potentiostat. Steel subject to intercrystalline corrosion can be utilized if its steady-state potential lies within the range of the stable passive state. These conclusions are in agreement with those of V. M. Knyazheva, Ya. M. Kolotyrkin, M. A. Vedeneva, and R. S. Ramazanova (Khim. prom-st', No. 5, 61, 1964). Orig. art. has: 3 figures.

ASSOCIATION: Gosudarstvennyy institut azotnoy promyshlennosti, Severodonetskii filial (State Institute of the Nitrogen Industry, North Donetsk Branch)

SUBMITTED: 26Sep64

ENCL: 00

SUB CODE: NN

NO REF SGV: 021

OTHER: 007

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2/2

L 55976-65 EWT(m)/EPF(o)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b)/EWA(c) HW/OD/HW/

ACCESSION NR: AP5012495

UR/0032/65/031/005/0582/0584  
620.193

35  
32  
3

AUTHORS: Kossy, G. G.; Kuzub, V. S.

TITLE: Potentiostatic determination of stainless steel tendency to intercrystalline corrosion

SOURCE: Zavodskaya laboratoriya, v. 31, no. 5, 1965, 582-584

TOPIC TAGS: stainless steel, corrosion, potentiometer / 5KN 100m accumulator, 2Kh18N9 steel

ABSTRACT: A method is offered for potentiostatic determination of steel tendency to intercrystalline corrosion by using a potentiostat shown schematically in Fig. 1 on the Enclosure. The procedure consists of holding a steel specimen in 10% H<sub>2</sub>SO<sub>4</sub> for 5 min at 18-25C at a potential of 150 mv, with subsequent microscopic observation of the metal surface. The appearance of grain-delineation is a sign of intercrystalline corrosion. The potentiostat is fed by two batteries (1) of five parallel connected accumulators 5KN-100m. A stainless steel pipe (2) 10 mm in diameter with 0.1 ohm resistivity serves as a low-resistance voltage divider. Water is run through the pipe for cooling. Nonpolarizable auxiliary electrodes

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ACCESSION NR: AP5012495

3

(3) are made of lead accumulator plates; their surface exceeds 100 times that of the electrode (4). They are recharged from the rectifier (5). Current strength is measured by the milliamperemeter (6). The saturated calomel electrode (7) serves as a reference electrode. The potential is controlled by the tube potentiometer (8); its value on the polarization curve is sustained with an accuracy up to 5 mv. Two microphotographs are shown of 2Kh18N9 steel specimens (water hardened at 1200C with and without tempering at 650C for 2 hours) tested in this device. The tendency toward intercrystalline corrosion in the tempered steel is clearly visible. Orig. art. has: 3 figures.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut azotnoy promyshlennosti i produktov organicheskogo sinteza. Severodonetskii filial (State Scientific Research and Design Institute of Nitrogen Industry and of Organic Synthesis Products, North Donets Branch)

SUBMITTED: 00

ENCL: 01

SIB CODE: MI

NO REF SGV: 003

OTHER: 004

Card 2/3

I: 55976-65  
ACCESSION NR: AP5012495

ENCLOSURE: 01

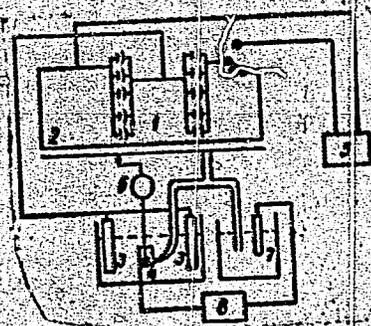


Fig. 1.

Schematic drawing of the potentiostat

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L 10850-66 EWT(m)/EWA(d)/EWP(t)/EWP(z)/EWP(b) IJP((t)) MJM/JD/WB

ACC NR: AP5025654

SOURCE CODE: UR/0080/65/038/010/2217/2222

59  
56B

AUTHOR: Kuzub, L. G.; Kuzub, V. S.; Kossyy, G. G.  
*55 44*      *55 44*      *55 44*

ORG: Severodonetskiy Affiliate of the State Institute of the Nitrogen Industry  
(Severodonetskiy filial Gosudarstvennogo instituta azotnoy promyshlennosti)

TITLE: Steel corrosion in nitric acid of various concentrations in the presence of halide ions [Paper presented at a republic conference on the use of acid corrosion inhibitors held in Kiev on 18 September 1963]

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 10, 1965, 2217-2222

TOPIC TAGS: nitric acid, carbon steel, corrosion rate, chloride, fluoride, corrosion inhibitor, corrosion resistance

ABSTRACT: The effect of chloride and fluoride ions on the corrosion rate of 1Kh18N9T steel was studied over a wide HNO<sub>3</sub> concentration range (1-100%), with 0.01, 0.05, 0.1, 0.5, 1, 2, and 3 wt % Cl<sup>-</sup> (added as NaCl) and 0.05, 0.1, 0.5, and 1 wt % F<sup>-</sup> (added as NaF). The corrosion rate was determined gravimetrically, and the steady state potentials of the steel were measured. The change in the degree of passivation of the steel was measured as a function of NaCl and NaF concentration and was found to be consistent with the change in the corrosion rate. In all HNO<sub>3</sub> concentrations, the presence of Cl<sup>-</sup> shifted the steady state potential toward the negative side; this

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ACC NR: AP5025654

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shift increased with the Cl<sup>-</sup> concentration. In 10-30% HNO<sub>3</sub>, an increased Cl<sup>-</sup> concentration led to an increase in the corrosion rate; in 98-100% HNO<sub>3</sub>, to its decrease with a reduction in intercrystalline corrosion; in 40-95%, the halide ions had practically no effect on the corrosion rate. An interpretation of this behavior is given. Orig. art. has: 4 figures, 1 table.

SUB CODE: 07, 11/

SUBM DATE: 27Apr63/

ORIG REF: 013/

OTH REF: 010

HW  
Card 2/2

J. 1201-66 EMT(m)/EPF(c)/ENP(t)/ENP(b)---IJP(c)---JD/WB  
ACCESSION NR: AP5014131 UR/0365/65/001/003/0272/0276  
620.193.2

27  
26  
B

AUTHOR: Kolotyrkin, Ya. M.; Kossyy, G. G.

TITLE: Influence of water on the anodic behavior of chromium in methanol solutions of hydrochloric acid

SOURCE: Zashchita metallov, v. 1, no. 3, 1965, 272-276, and insert facing p. 274

TOPIC TAGS: solution concentration, electric potential, potentiometer, anodic refining

ABSTRACT: The anodic behavior of 99.9% Cr sheets was studied in methanol solutions of HCl with additions of water. Measurements of the electrode potential were made by means of a potentiostat up to 50 mv; at room temperature, and the potential was measured relative to a saturated aqueous calomel electrode. Data were presented in the form of anodic polarization curves (potential as a function of  $\lg i - a/cm^2$ ) for Cr in 0.1, 0.5 and 1.0 N HCl in methanol with varying additions of water, i. e., 0, 1, 2, 3, 4, 5, and 10%. Special experiments were run on 0.1 N HCl + 0.9 N LiCl solutions in which the acidity/ $Cl^-$ -ion concentration was varied; this did not appre-

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L 4204-66

ACCESSION NR: AP5014131

ciably influence the kinetics of active solubility. Although adding water did not affect the regions of active solubility, adding it to the solution up to saturation changed the potentiostatic curves in the direction of more positive potentials. The activation potential was plotted as a function of H<sub>2</sub>O concentration, for 0.1, 0.5, and 1 N HCl solutions. In all cases the potential increased with increase in H<sub>2</sub>O concentration, the slope of the curve decreasing with higher acidity of solution. The activation of the Cr surface sometimes resulted in pitting, which vanished when the H<sub>2</sub>O concentration was increased beyond a critical limit--3.5% for 0.1 N HCl and 9% for 1 N HCl solutions. In these cases the activation potential was displaced to the more positive side of the overpassivation potentials. Comparisons were made between cast and rolled electrodes; the anodic polarization curves in both cases were similar, while the form of the pitting attack was essentially different. Thus, for low H<sub>2</sub>O concentrations, there were differences, while at higher H<sub>2</sub>O concentrations pitting did not depend on the structure. Based on the experimental data, the passivation of Cr in acid solutions is related to its interaction with H<sub>2</sub>O molecules. The first stage of this interaction is hypothesized to be the absorption of the H<sub>2</sub>O molecule at the passivation potential leading to the displacement of Cl<sup>-</sup> ions from the surface. Using this approach, the shape of the polarization curves

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ACCESSION NR: AP5014131

are deduced, and the role of activation-passivization of Cr in acid solutions is explained. Orig. art. has: 3 figures.

ASSOCIATION: Nauchno-issledovatel'skiy fiziko-khimicheskiy institut im. L. Ya. Karpova (Physicochemical Scientific Research Institute)

SUBMITTED: 19Jan65

ENCL: 00

SUB CODE: GC, MM

NO REF SOV: 009

OTHER: 000

Card 3/3 *DP*

KUZUB, V.S.; KOSSYY, G.G.

Study of the passivity of stainless steel in nitric acid by the  
measurement of differential capacity. Zhur.prikl.khim. 38 no.6:1404-  
1407 Je '65. (MIRA 18:10)

1. Lisichanskiy filial Gosudarstvennogo instituta azotnoy  
promyshlennosti.

KOLOTIKIN, Ya.F.; KOSSYY, G.G.

Effect of water on the anodic behavior of cerium in methanol  
solutions of hydrogen chloride. Zashch. met. l no. 1272-  
276 My-Je '65. (MIRA 18:8)

1. Nauchno-issledovatel'skiy fiziko-khimiicheskiy institut imeni  
I.Ya. Karpova, Moskva.

L 62191-65 EWT(m)/EPF(c)/EWA(d)/EWF(z)/EWP(z)/EWP(b) MJW/JD/WE  
ACCESSION NR: AP5015888

UR/0080/65/038/006/1404/1407  
620.193.41 + 541.13

31  
29  
B

AUTHOR: Kuzub, V. S., Kossyy, G. G.

TITLE: Study of the passivity of stainless steel in nitric acid by measuring the differential capacity

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 6, 1965, 1404-1407

TOPIC TAGS: stainless steel, steel corrosion, steel passivation, nitric acid, differential capacity

ABSTRACT: The differential capacity method was used to study the passivation of OKh18N9 stainless chromium-nickel steel by nitric acid of various concentrations. Fig. 1 of the Enclosure shows the difference  $\Delta C$  between the initial capacity values (measured 10 minutes after immersion) before and after passivation versus the concentration of the passivator ( $HNO_3$ ). Three portions are seen on this curve: the region of low concentrations (up to 30%), the passivity region (30-95%), and the transpassivation region (95-100%  $HNO_3$ ). This figure also shows the corrosion rate versus the acid concentration for OKh18N9T steel, whose composition is close to the one being studied. The constant dissolution rate at  $HNO_3$  concentrations up to 25-30% is probably due to the increase in

Card 1/3

L-62191-65

ACCESSION NR: AP5015988

2

acidity and the oxidizing properties of  $\text{HNO}_3$ . In the region of the stable passive state (30-95%), almost the entire surface becomes coated with a passivating film. Owing to the high positive potential acquired by steel in  $\text{HNO}_3$ , a passivating adsorption of anions may take place in the pores of this film. The sharp decrease in  $\Delta C$  in the transpassivation region is apparently due to the dissolution of portions of the film via the same mechanism which governs the dissolution of the metal itself in this region, i.e., is due to the formation of soluble compounds with metal ions in a higher oxidation state. Above 98%  $\text{HNO}_3$ , the capacity after passivation is greater than before it, i.e., the sign of  $\Delta C$  changes. This is due to the fact that in the transpassivation region, the true surface of the electrode increases because of the nonuniformity of the dissolution and primarily because of intercrystalline corrosion. "A. N. Zincke" took part in the experimental work." Orig. art. has: 4 figures and 1 formula.

ASSOCIATION: Lisichanskiy filial Gosudarstvennogo instituta azotnoy promyshlennosti  
(Lisitsy Branch, State Institute of the Nitrogen Industry)

SUBMITTED: 14 Feb 63

ENCL: 01

SUB CODE: MM

NO REF SOV: 015

OTHER: 004

Card 2/3

L. 62191-65

ACCESSION NR: AP5015888

ENCL: 01

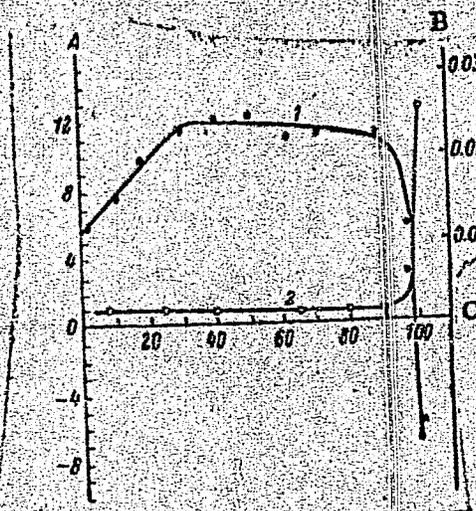


Fig. 1. Capacity decrease ( $\Delta C$ ) during passivation for OKh18N9 steel (1) and corrosion rate of 1Kh18N9T steel (2) versus HNO<sub>3</sub> concentration.

- A - capacity decrease,  $\Delta C$  ( $\mu F/cm^2$ );
- B - Corrosion rate ( $g/m^2 \cdot hr$ );
- C - HNO<sub>3</sub> concentration (wt. %).

Cord

3/3

I 13448-66 EWT(1)/ETC(f)/EPF(n)-2/EWG(m) IJP(c) GG/AT

ACC NR: AP8002442

SOURCE CODE: UR/0057/65/035/012/2189/2193

AUTHOR: Kossyy, I.A. 23  
E

ORG: none

TITLE: Radial charged particle flux in a discharge excited by high-frequency traveling H waves

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 12, 1995, 2189-2193

TOPIC TAGS: plasma confinement, plasma diffusion, traveling wave, electromagnetic wave, *charged particle, ionized plasma, hydrogen plasma, electron temperature, ion temperature*

ABSTRACT: In connection with the proposal of S.M.Osovets (Fizika plazmy i problemy upravlyayemykh termoyadernykh reaktsiy, 4, 3. Izd. AN SSSR, M. 1958) to confine a hpt plasma by means of the field of a high-frequency traveling electromagnetic wave,<sup>2</sup> the author has solved the diffusion equations to determine the radial flux and density distribution of charged particles in a weakly ionized plasma in the presence of traveling H waves. It was assumed that the frequency of the waves exceeds the ion Larmor frequency (so that the effect of the high-frequency field on the ion motions can be neglected), that the wavelength is much longer than the radius of the plasma filament, that the only radial force on the plasma due to the traveling wave is that arising from the radial gradient of the average magnetic pressure, and that the electron temperature is much higher than the ion temperature. Numerical solutions

Card 1/2

UDC: 537.523.7

L 12448-66

ACC NR: AP6002442

are presented graphically for a hydrogen plasma with an electron temperature of 10 eV and traveling wave field strengths from 70 to 200 Oe. These solutions are in agreement with experimental data of R.A. Demirkhanov et al. (ZhTF, 32, 1248, 1962). At a gas pressure of 0.1 mm Hg the radial flux of charged particles to the wall of a 2 cm radius chamber increases with increasing strength of the high frequency field up to a field strength of 200 Oe and decreases with further increase of the field strength. Contraction of the plasma can be expected in traveling H waves with field strengths exceeding 500 Oe. The presented solutions of the diffusion equations together with results obtained by R.A. Demirkhanov et al. (ZhTF, 35, 43, 1965) can be employed to estimate the effectiveness of traveling H waves as a means for confining hot plasmas. Orig. art. has: 20 formulas and 2 figures.

SUB CODE: 20

SUBM DATE: 09Oct64

ORIG. REF: 010 OTH REF: 001

Cord 2/2 FW

1-27598-65 EWT(1)/EPA(sp)-2/EPA(w)-2/EEC(t)/T/EWA(m)-2 pz-6/po-4/pab-10/pi-4  
IJP(C) AT

ACCESSION NR: AP5003234

B/0057/65/035/001/0043/0046

66  
438

AUTHOR: Demirkhanov, R.A. / Kossyy, I.A. / Leonit'yev, N.I. / Lozovskiy, S.N. / Udovichenko, Yu.K. / Filatova, T.M.

TITLE: Interaction of a traveling electromagnetic wave with a plasma

SOURCE: Zhurnal tekhnicheskoy fiziki, v.30, no.1, 1985, 43-48

TOPIC TAGS: plasma, plasma confinement, plasma heating, plasma wave absorption, traveling wave

ABSTRACT: An experimental investigation was undertaken to test the possibility of confining a plasma by means of a traveling electromagnetic wave as proposed by S.M. Osovets (Fizika plazmy i problemy upravlyayemykh termoyadernykh reaktsiy [Plasma physics and problems of controlled thermonuclear reactions] Vol.4, p.3, Izd.AN SSSR, 1958). A toroidal pulsed machine was employed, similar to that described elsewhere by R.A. Demirkhanov et al. (ZhTF 32: 248, 1952). Hydrogen plasma was investigated at a pressure of 0.08 mm Hg. One megacycle/sec traveling waves were produced with a delay line terminated in its surge impedance. The phase velocity was  $5.6 \times 10^7$  cm/sec

Card 1/3

L 27596-65

ACCESSION NR: AP5003234

2

and the maximum amplitude of the magnetic field was 230 Gs. The electron density and temperature and the longitudinal component of the high frequency magnetic field were measured at various distances from the axis to the discharge tube by means of probes. The electron temperature was approximately constant at 60 000 °K and the electron density was of the order of  $10^{14}$  cm<sup>-3</sup>. From the measured data the gradients of the plasma pressure and the magnetic pressure were calculated. The plasma pressure gradient everywhere exceeded the magnetic; confinement of the plasma was accordingly not achieved. Some calculations are presented concerning the behavior of a plasma in a high frequency magnetic field. To achieve confinement it is not sufficient simply to increase the magnetic field strength, for the high frequency field tends to heat the plasma. It is concluded that confinement can be achieved only in an incompletely ionized plasma with a large electron density, in which energy can be transferred from the electrons to the walls of the chamber via the ions and the neutral particles. "The authors express their gratitude to S.V. Kuril'nikov and N.V. Aleksandrov for constructing the power supply for the high-frequency discharge." Orig.art.has: 13 formulas and 2 figures.

Card 2/3

L 27596-65

ACCESSION NR: AP5003234

ASSOCIATION: none

SUBMITTED: 16Feb64

ENCL: 00

SUB CODE: ME

NR REF SCV: 008

OTHER: 001

Card 3/3

L 33387-66 EWT(1)/ETC/F IJP(c) AT  
 ACC NR: AP6015310 (A, N)

SOURCE CODE: UR/0057/66/036/005/0881/0891

AUTHOR: Kossyy, I.A.; Shpigel', I.S.; Dorofeyev, Ye.V.

ORG: Physics Institute im. P.N.Labedev, Moscow (Fizicheskiy institut)

55  
B

TITLE: Investigation of a conical induction plasma source

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 5, 1966, 881-891

TOPIC TAGS: plasma gun, plasma source, plasma jet

ABSTRACT: A two-stage electrodeless conical plasma gun was investigated in an effort to achieve a more efficient induction plasma source and to learn something about the operating mechanism of conical plasma guns. A diagram of the apparatus is shown in the figure. The capacity of  $C_2$  and  $C_3$  was 0.6 and 2.8  $\mu\text{F}$ , respectively, and both capacitors were charged to a maximum potential of 22 kV. The auxiliary cone was 7 cm long with base diameters of 2.4 and 4 cm; the main cone was 20 cm long with base diameters of 4.7 and 11.4 cm. The distribution of both the longitudinal and radial components of the magnetic field in the main cone was measured with a  $\leq 2$  mm diameter magnetic probe, and the distribution of neutral gas on the axis of the system was determined with an ionization manometer. The properties of the plasmas were determined with a double electrostatic probe. The plasma source operated most efficiently when discharge through the main cone was delayed until plasma from the auxiliary cone had

UDC: 533.9.07

Card 1/3

ACC NR: AP6015310

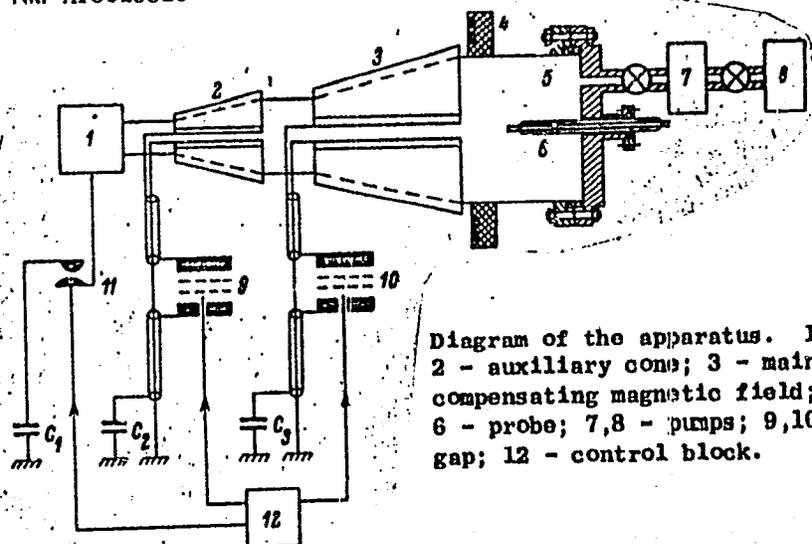


Diagram of the apparatus. 1 - quick-acting valve; 2 - auxiliary cone; 3 - main cone; 4 - winding for compensating magnetic field; 5 - vacuum chamber; 6 - probe; 7, 8 - pumps; 9, 10 - vacuum gaps; 11 - gap; 12 - control block.

reached it. Under these conditions a current sheet was formed in the main cone 0.28 microsec after initiation of the discharge (the period of the oscillating discharge was approximately 2 microsec), whereas in single-stage operation the current sheet was not formed until the third half-period. The charged particle density in

Card 2/3

Card 3/3

KOST, A., doktor khimicheskikh nauk; TERENT'YEV, P., kand. khimicheskikh nauk

Treasures of the methane family. Nauka i zhizn' 30 no.9:8-9,  
32 b-c S '63. (MIRA 16:10)

GRANDBERG, I.; NAUMOV, Yu.; KOST, A.

Mechanism of the Robey amidine rearrangement. Doklady BAN 17 no.11:  
1025-1026 '64.

1. The M.V. Lomonosov State University, Moscow. Submitted July  
15, 1964.

ZOLOTAREV, Ye.Kh., KOST, A.N., FRIDDER, M.L., YUDIN, L.G., URGENSON, I.A.

~~SECRET~~  
Measures for human protection against rat flea attacks. Nauch.dokl.  
vys.shkoly;biol.nauki no.1:44-45 '58 (MIRA 11:8)

1. Predstavlena kafedrami entomologii i organicheskoy khimii  
Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova i  
TSentral'nym nauchno-issledovatel'skim dezinfektsionnym institutom  
Ministerstva zdravookhraneniya SSSR.  
(INSECT BATS AND REPELLENTS)  
(FLEAS)

SOV/156-58-1-30/46

AUTHOR: Kost, A. N.

TITLE: On the Synthesis of Amines According to the Method Developed by Leukart (O sinteze aminov po metodu Leykarta)

PERIODICAL: Nauchnyye doklady vysshey shkoly, Khimiya i khimicheskaya tekhnologiya, 1958, Nr 1, pp. 125 - 129 (USSR)

ABSTRACT: The tests carried out by the author (Ref 1) and other investigators have shown that the Leukart (Leykart)-reaction is accelerated by an addition of an excess of acid. Primary-amine (as a formic derivative) is formed for the most part in this reaction. A presumptive scheme of the process is given. After an addition of sodium-formate or urea, the reaction also is somewhat accelerated, but leads for the most part to the secondary amine. The reduction of the formed formamido-carbinols takes different courses. The fact that the Leukart-reaction is in many cases accelerated by the addition of dehydrating substances, made presumable the formation of intermediate products, viz. of imines, or, if impossible, of enamines. Both of them can be easily reduced by formic acid (Ref 12). Formamido-carbinol is possibly converted into ether by means of formic acid. The developing formate splits off CO<sub>2</sub> when being heated (especially

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SOV/156-58-1-30/46

On the Synthesis of Amines According to the Method Developed by Leukart

readily in the presence of a catalyst). In this very way (according to the given scheme) the process takes place with the reduction of di- and triaryl carbinols by formic acid (Ref 3). The rôle of the dehydrating substance is limited to facilitate the conversion into ether. In the present report the author has carried out the Leukart-reaction by using skeleton nickel. Skeleton cobalt which acts somewhat more energetically was used for comparison. Indications (Ref 4) to a steric tendency of the Leukart(Leykart) reaction are found in literature. In connection with this, the author carried out the hydramination of 3-methyl-cyclohexanon and of 1-methyl-cyclohexene-1-on-3. In the presence of catalysts (if the process proceeds rapidly) a marked prevalence of either a cis- or a trans-methyl-cyclohexyl-amine could not be found. Dicyclo-hexyl amine is often contaminated by the admixture of formic-cyclohexyl amine in spite of a several hours' boiling with concentrated hydrochloric acid. The cause for this might be the reversibility of the reaction. R.S.Sagitullin assisted in the experiments. There are 12 references, 5 of which are Soviet.

Card 2/3

On the Synthesis of Amines According to the Method  
Developed by Leukart

SOV/156-50-1-30/46

ASSOCIATION: Kafedra organicheskoy khimii Moskovskogo gosudarstvennogo  
universiteta im. M.V.Lomonosova (Chair of Organic Chemistry at  
the Moscow State University imeni M.V.Lomonosov)

SUBMITTED: September 30, 1957

Card 3/3

DVORETSKAYA, Ye.I.; KOST, A.N.; PYRINA, I.L.

Effect of some hydrazine derivatives on the causative agents of  
tomato-leaf mold (*Cladosporium fulvum* Cooke). Nauch. dokl. vys. shkoly;  
biol. nauki no.2:115-124 '58. (MIRA 11:10)

1. Predstavlena kafedrami fiziologii rasteniy i organicheskoy khimii  
Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova.  
(Tomatoes--Diseases and pests) (Acetone) (Pyridazone)

5(3)  
AUTHORS: Yudin, L.G., ~~Kost, A.N.~~, Zalotarev, Ye, Kh., SOV/55-58-2-22/35  
and Mirza, A.N.  
TITLE: Some Derivatives of the Tetrahydroquinoline and Their Effect  
on Plant-Lice (Nekotoryye proizvodnyye tetrogidrokhinolina  
i ikh deystviye na tley)  
PERIODICAL: Vestnik Moskovskogo Universiteta, Seriya matematiki, mekhaniki,  
astronomii, fiziki, khimii, 1958, nr 2, pp 169-176 (USSR)  
ABSTRACT: Several combinations from the series of the 1,2,3,4 - tetra-  
hydroquinoline were synthetically obtained. In a con-  
centration of 0,5% in an emulsion most of them are toxics for  
plant-lice and show a high mortality. Some preparations have  
a highly caustic effect on plants.  
There are 12 references, 5 of which are Soviet, 4 American,  
and 3 German.  
ASSOCIATION: Kafedra organicheskoy khimii i kafedra entomologii  
(Chair of Organic Chemistry and Chair of Entomology) [Moscow Univ.]  
SUBMITTED: April 3, 1957

Card 1/1

AUTHORS: ~~Kost, A. N.~~, Busev, A. I.,  
Grandberg, I. I., Byr'ko, V. M.

SOV/156-58-2-37/48

TITLE: The Dithiocarbamates of the Pyrazoline Series (Ditiokarbamaty pirazolinovogo ryada) Their Synthesis and Investigation as Analytic Reagents (Sintez i izucheniye ikh kak analiticheskikh reagentov)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 2, pp. 349 - 353 (USSR)

ABSTRACT: The first mentioned salts are widely used in analytic chemistry (Refs 1-3). The acids from pyrrolidine and piperidine synthesized are stable in acid media and in the case of heating and have a somewhat higher selectivity than others. The comparatively simple new production methods of the pyrazolines (Refs 4-7) enabled the authors to carry out the synthesis of the dithio-carbamic acids of the pyrazoline series (1-dithio-carboxy-pyrazoline). These acids were isolated as sodium salts. They crystallize well, are stable in dry state and well soluble in water as well as in alcohol. The aqueous solutions of these salts give an alkaline reaction; in

Card 1/3

The Dithiocarbamates of the Pyrazoline Series. Their  
Synthesis and Investigation as Analytic Reagents

SOV/156-58-2-37/48

the case of an acidification, however, a decomposition takes place, since the corresponding dithio carbamic acids are not stable. A new method due to Pedoseyev (Ref 9) was used here, since an elementary analysis of the sodium salts by means of usual methods does not yield good results (e.g. Ref 8). The products of the ethylation of cyanogen have a distinct melting temperature and may therefore serve for the identification of the substances. 10 (I - X) compounds were synthesized and investigated as analytic reagents. Absorption spectra taken for the sodium salts and the stability in aqueous solutions were investigated. The solubility of some cadmium derivatives was determined by means of the method of tracer atoms. It was proved that pyrazoline dithio-carbamates separate certain groups of metal cations at different pH-values. There are 2 figures, 1 table, and 13 references, 9 of which are Soviet.

Card 2/3

The Dithiocarbamates of the Pyrazoline Series. Their  
Synthesis and Investigation as Analytic Reagents

SOV/156-58-2-37/48

ASSOCIATION: Kafedry organicheskoy i analiticheskoy khimii Moskovskogo  
gosudarstvennogo universiteta im.M.V.Lomonosova (Chair  
of Organic and Analytical Chemistry of the Moscow State  
University imeni M.V.Lomonosov)

SUBMITTED: November 29, 1957

Card 3/3

5(3), 17(12)

AUTHORS:

Terent'yev, A. P., Kost, A. N., Zolotarev, SOV/153-58-4-9/22  
Ye.Kh, Vinogradova, Ye. V., Kalakutskaya, T. V., Yurgenson,  
I. A.

TITLE:

I.The Esters of Tetrahydro-Phthalic Acid and Its Homologs  
as Insect Repellents (I.Efiry tetragidroftalevoy kisloty  
i yeye gomologov kak insektorepellenty)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavodeny. Khimiya i khimiches-  
kaya tekhnologiya, 1958, Nr 4, pp 55 - 60 (USSR)

ABSTRACT:

Although the insect repellents have been more and more  
applied so far and thousands of individual preparations  
have been tested, neither the relation between their  
structure and efficiency nor their mechanism of  
efficiency have been definitely clarified. For these  
reasons the search for new means was often unsuccessful,  
whereas hardly a few of the thousands of tested sub-  
stances were practically used. Dimethyl phthalate is  
the most carefully investigated and practically most  
applied repellent. Yet it is not efficient in any case,  
and large-scale use of it is limited by raw material

Card 1/4

I. The Esters of Tetrahydro-Phthalic Acid and Its Homologs as Insect Repellents

SOV/153-58-4-9/22

scarcity. The authors synthesized other prospective repellents: "Indolon", "Rudzhers-612" (in the USSR RP -52) and "Dimelon" (RP -50), which had the same effect as or a weaker effect than dimethyl phthalate on various mosquito species. RP -50 was a little more active than others. Therefore the authors investigated, according to the structural analogy, a series of esters of the tetrahydro phthalic acid (RP -1, RP -2, RP -5, RP -17, RP -20, RP -23, RP -33 and RP -51). Dimethyl, diethyl and dibutyl phthalate were used for comparison. The compounds investigated are related in structure to dimethyl phthalate, but differ by their lack of aromatic bonds in the 6-membered ring. Diene hydrocarbons and maleic anhydride, which are easily obtained by benzene or furfural-oxidation, were the raw materials used for that purpose. In summer of 1954, Ye. Kh. Zolotarev and N. A. Tamarina investigated at the Belomorskaya biologicheskaya stantsiya MGU (White Sea Biological Station of the university mentioned in the title) the effect of individual preparations on mosquitoes *Aedes communis* and *Ae. dorsalis* and cerato-

Card 2/4

I. The Esters of Tetrahydro Phthalic Acid and Its Homologs as Insect Repellents

SOV/153-58-4-9/22

pogonides of the species *Calicoides*. At the Rybinskiy meditsinskiy institut imeni I.P.Pavlova (Ryazan' Medical Institute imeni I.P.Pavlov) it was found that a narcotic effect (fusel-oil drunkenness) is exercised by the dibutyl esters upon rats and rabbits. Large-scale tests in 1956 showed that the preparations RP-1 and RP-50 protect efficiently against the mosquitoes: *Aedes vexans*, *A. maculatus*, *A. excrucians*, *A. Cyprius*, *A. cataphylla*, *A. punctor*, *A. communis*, *A. cinereus*, *A. dorsalis*, and *Anopheles bifurcatus*. A table shows the comparative efficiency of individual repellents. It results from this that the repellents RP-1, RP-17 and RP-51, which were investigated for the first time, are equal to dimethyl phthalate with respect to their efficiency. The efficiency degree of various mixtures of these compounds was not higher. Further investigations would be necessary only of RP-44 (dimethyl phthalate with diethyl adipate), RP-46 (the same with dibutyl sebacinate) and RP-47 (the same with anisole), since they are a little longer efficient against mosquitoes. All preparations

Card 3/4

I. The Esters of Tetrahydro Phthalic Acid and Its  
Homologs as Insect Repellents

307/153-30-4-0/22

were investigated as to their acidity, which causes skin irritation, as is known. It was found that the introduction of a methyl or methylene group into the structure of the dimethyltetrahydro phthalate does not exert considerable influence upon the activity of the preparation. Additives were supplied by P.A.Moshkin, Corresponding Member, Academy of Sciences, USSR, and V.I.Lyubomilov, Candidate of Chemical Sciences. There are 1 table and 18 references, 5 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova  
(Moscow State University imeni M.V.Lomonosov) Kafedra  
organicheskoy khimii i kafedra entomologii (Chair of  
Organic Chemistry and Chair of Entomology)

SUBMITTED: November 2, 1957  
Card 4/4

AUTHORS: Kost, A.N., Yershov, V.V. (Moscow) 74-27-L-3/8

TITLE: ~~Synthesis and Properties of Pyrazolines (Sintez i svoystva~~  
pirazolinov)

PERIODICAL: Uspekhi Khimii, 1958, Vol. 27, Nr 4, pp. 431-458 (USSR)

ABSTRACT: During recent years cyclic hydrazine derivatives have been subjected to a particularly intense investigation. This includes also the  $\Delta^1$ -pyrazolines with binary binding between the nitrogen atoms as well as the not substituted  $\Delta^2$ -pyrazolines with binary binding between nitrogen- and carbon atoms, and 1-substituted  $\Delta^2$ -pyrazolines. The present report deals especially with nitrogen-substituted  $\Delta^2$ -pyrazolines: The methods of synthesization, the reaction of hydrazines with unsaturated  $\alpha$ ,  $\beta$ -aldehydes and ketones, as  $\beta$ ,  $\gamma$ , - or  $\gamma$ ,  $\delta$ -unsaturated aldehydes and ketones under the influence of hydrazine produces only hydrazones and azines. The report further deals with the reaction of hydrazines with  $\beta$ -substituted ketones, with the reaction of hydrazines with  $\beta$ -halide ketones, the reaction of hydrazines with  $\beta$ -aminoketones (in which connection it must be pointed out that recently various  $\beta$ -aminoketones, owing to the further development of the

Card 1/3

## Synthesis and Properties of Pyrazolines

74-27-4-3/8

Mannich reaction (reaktsiya Mannikha) have been counted among the easily accessible compounds). Mention is made of the works by Nisbets (Ref 92), Babayan and Gambaryan (Ref 99), as well as by Kost and Yershov. There follows a description of a compound of aliphatic diazocompounds with pyrazolines which are formed (by a binary carbon-carbon linkage); furthermore, a description is given of the reduction of nitrogen-containing compounds. The following chapter deals with the production of pyrazolines from nitrils (action of aryl hydrazines upon unsaturated nitrils). There follows a description of the properties of pyrazolines: of their oxidation, reduction, alkylation, azylation and arylation. Moreover, the decomposition of pyrazolines is discussed (reaction according to Kizhner). In conclusion the report deals with pyrazoline-substituted compounds: 4-bromopyrazoline easily separates the bromine-hydrogen molecule (during boiling of the sodium acetate solution) so that pyrazoles with a good yield are obtained. Further possibilities are mentioned as e.g. that 5-nitropyrazolines separate nitrogenous acid, on which occasion pyrazoles are formed under the effect of hydrochloric acid; it is further said that in 5-bromine-5-nitropyrazolines nitropyrazol and in acid media bromopyrazol are formed under alkaline action. Further methods of obtaining

Card 2/3

Synthesis and Properties of Pyrazolines

74-27-4-3/8

pyrazoline derivatives are described as e.g. from 3-nitropyrazolines, 5-oxypyrazolines, 4-aminopyrazolines in cis form, 3-pyrazoline carboxylic acids. In conclusion a short survey is given of the physiological effect produced by pyrazolines: A number of 1,5-diaryl-3-dialkylaminoethyl-pyrazolines have analgesic properties; 1-phenyl-3-aminopyrazoline retards the growth of tubercles (in dilution 1 : 1 million). The application of pyrazolines and their derivatives in practice has hitherto not had the attention it deserves. There are 227 references, 50 of which are Soviet.

1. Hydrazine---Synthesis

Card 3/3

*KOST, A.N.*

AUTHORS: Kost, A. N., Grandberg, I. I., Yevreinova, E. B. 79-2-51/64

TITLE: On the Reaction of Hydrazine Derivatives  
(Reaktsii proizvodnykh gidrazina).  
XVIII. On the Effect of the Acid Agent on Azines  
(XVIII. O deystvii kislotnykh agentov na aziny).

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 2, pp. 512-518  
(USSR)

ABSTRACT: The descriptions of the effect of the acyl halides on azines are very contradictory. The results obtained by Minnani et al. (ref. 5), Lochte et al. (ref. 6) and Benary (ref. 7) cannot be brought in line. Benary's observation of the transformation of cyclohexane azine into octahydrocarbazole was confirmed, however, it was not possible to use the reaction for other azines. A compound with the melting point 236°C was obtained from acetone azine with benzoyl chloride equal to that obtained by Lochte which, however, was not benzoylpyrazoline but was symmetrical to dibenzoylhydrazine. In the case of complete elimination of humidity the same reaction however, actually produces benzoylpyrazoline which, however, shows completely different properties (melting point 93°C) and was

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On the Reaction of Hydrazine Derivatives.

79-2-51/64

XVIII. On the Effect of the Acid Agent on Azines

characterized first by the authors of the present work. The cleavage of the azines under formation of the symmetry of the diacylhydrazines was observed also on the occasion of the action of benzoyl chloride on azines of the methylisopropylketone or of the cyclopentanone. Beside the usual determinations of configuration N. B. Kupletskaya (ref. 9) also put down the corresponding absorption spectra. It is stated that the occurrence of a cleavage or a cyclization depends not so much on the nature of azine and the acylating agent but on the reaction conditions. If humidity is in the reaction mass, mainly a cleavage of the azine takes place. On the occasion of cyclization of cyclopentanone azine with anhydrous formic acid the compound  $C_{15}H_{22}N_2$  was obtained.

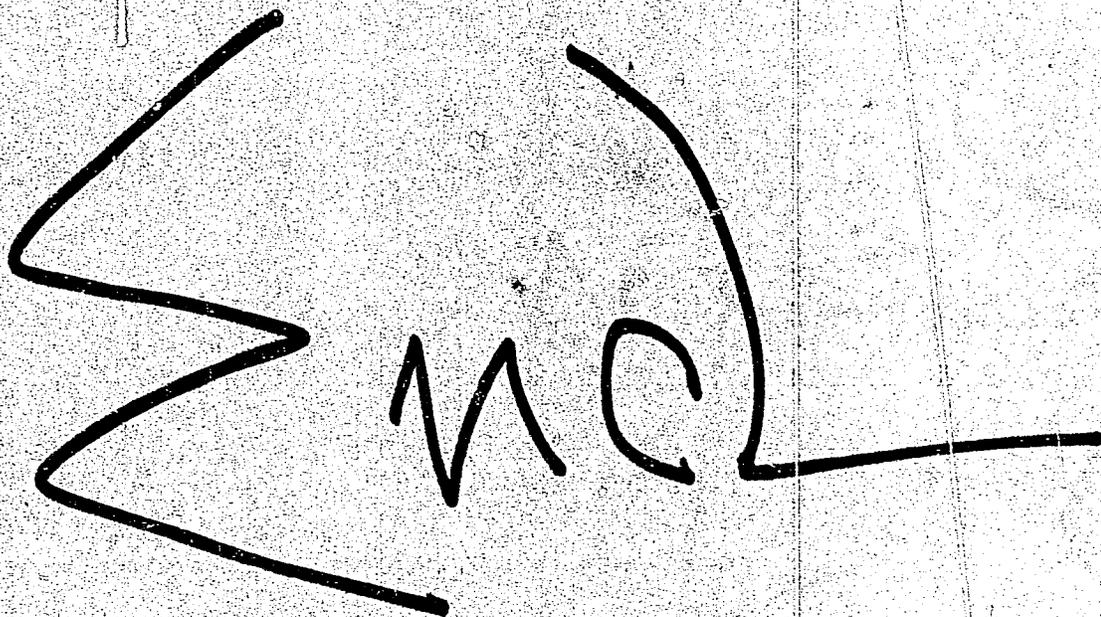
According to V. A. Koptsik (Physical Faculty of Moscow State University it shows, among other, a strong piezoelectric effect. It was observed that cyclohexanoneazine reacts energetically to phosphorous tribromide and that  $\beta, \beta'$ -dibromodiethylether (due to the dioxane ring cleavage) is formed in dioxane with octohydrocarbazole.

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REEL # 251

Mosenko, P.  
To

Kost, A. N.

A handwritten signature in black ink on a document page. The signature consists of three parts: a large, stylized 'S' on the left, a smaller 'M' in the middle, and a 'C' on the right. A horizontal line extends from the right side of the 'C' across the page. The document has a grainy, high-contrast appearance.

Rest of cards  
on Kost, A.N.

AUTHORS: Kost, A. N., Gents, F.

SOV/79-28-10-29/60

TITLE: Reactions of the Hydrazine Derivatives (Reaktsii proiz-  
vodnykh gidrazina) XIX. Condensations of 4-Amino (1,2,4)-  
Triazole With Esters (XIX. Kondensatsii 4-amino-(1,2,4)-  
triazola so slozhnymi efirami)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol 28, Nr 10,  
pp 2773 - 2779 (USSR)

ABSTRACT: As the oxytriazole pyridazines with the cations of some  
metals can yield complex compounds the authors of  
this paper synthesized a number of these compounds  
(Refs 5,6). They mixed the corresponding keto ester with  
the 4-amino triazole and heated the mixture at 180-200°  
for 20-30 minutes, with the alcohol and the water being  
driven off. In a too energetic process, as is the case  
with the 2-carbethoxy cyclopentanone (under the  
formation of compound (III)) xylene, toluene or benzene  
were added and the acetropic mixture was slowly driven  
off. It is interesting to learn that the yield depends  
on the velocity of heating. In the case of a slow heating

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Reactions of the Hydrazine Derivatives. XIX.  
Condensations of 4-Amino-(1,2,4)-Triazole With Esters

SOV/79-28-10-29/60

a resinification (Reaction Scheme 2) occurs. In the case of the 2-carbethoxy cyclohexanone no condensation products are obtained. The condensation of the amino triazole with the  $\alpha$ -formyl phenyl acetate also failed. Based on the results obtained the condensation of amino triazole was carried out with malonic ester. As it was not expected, also an excess malonic ester with two molecules amino triazole enters reaction and forms the N,N'-di-(1,2,4-triazolyl-4)-malonamide (X). Cyclization products at the expense of the hydrogen atoms of the triazole nucleus could not be found. The structure of the diamide (X) was proved by the infrared absorption spectrum. The acetic solution of this diamide precipitates the ions  $\text{Cu}^{2+}$ ,  $\text{Ni}^{2+}$  and  $\text{Co}^{2+}$ , but not  $\text{Al}^{3+}$ ,  $\text{Cd}^{2+}$ ,  $\text{Bi}^3$  and  $\text{Th}^{4+}$  from the aqueous solution in the presence of sodium acetate. No precipitation takes place in alkaline medium. This reaction does not take place so easily with ethyl malonic ester under the formation of compound (XI) (15,2% yield) and almost not at all with butyl malonic ester. In the reaction of

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Reactions of the Hydrazine Derivatives. XIX.  
Condensations of 4-Amino-(1,2,4)-Triazole With Esters

SOV/79-28-10-29/60

4-amino-1,2,4-triazole with diethyl oxalate the compound (XII) was obtained. This diamide precipitates the ions  $\text{Cu}^{2+}$ ,  $\text{Mg}^{2+}$  and  $\text{Cd}^{2+}$  in alkaline medium in the presence of sodium tartrate, and in acetate medium the ions  $\text{Cu}^{2+}$ , however, not  $\text{Al}^{3+}$  and  $\text{Fe}^{3+}$ . The cyanethylation of 4-amino triazole in alkaline medium is described. There are 14 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)  
SUBMITTED: September 11, 1957

Card 3/3

AUTHORS: Grandberg, I.I., Kost, A.N. SOV/79-28-11-37/55

TITLE: Reactions of Hydrazine Derivatives (Reaktsii proizvodnykh gidrazina)  
XX, Dehydration of Pyrazolines (Degidrirovaniye pirazolinov)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol 28, Nr 11, pp 3071-3075 (USSR)

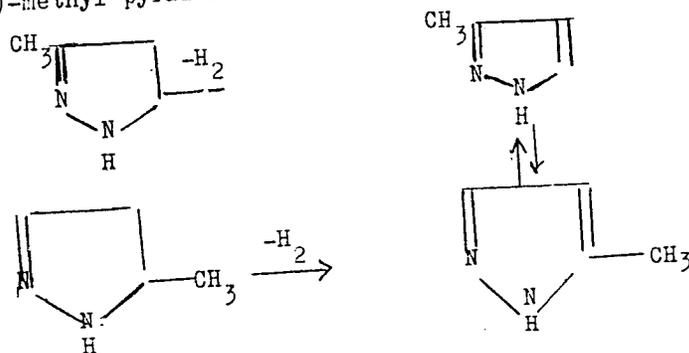
ABSTRACT: Experiments of the authors to oxidize the 4-ethyl-5-propyl- and 4-isopropyl-5-isobutyl pyrazoline failed. Various types of oxidizing agents, as selenium dioxide, nitric acid, permanganate etc. destroyed the pyrazoline cycle under the formation of many oxidation products. The N-formyl-, N-acetyl and N-benzoyl pyrazoline derivatives were not attacked by weak oxidizing agents, and by strong oxidizing agents were subjected to a similar destruction under the formation of nitrogen. In the bromination besides the oxidation also a bromination took place. The authors succeeded in smoothly realizing the transition of the pyrazolines into the pyrazoles. They used selenium, and with a still better result sulfur as dehydration medium. The reaction took place at 150-250° without side processes. It is finished as soon as no more hydrogen sulfide is formed. An excess sulfur is of no importance. In the pyrazoles there are, contrary to the pyrazolines, two conjugated double bonds with a free pair of electrons of the nitrogen atom. In the case of such a structure

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SOV/79-28-11-37/55

Reactions of Hydrazine Derivatives. XX. Dehydration of Pyrazolines

with an electron sextet in the nucleus compounds with a substituent in the position 3 prove to be identical with compounds having a substituent in the position 5. For this reason, for instance, the 3-phenyl-5-methyl pyrazole (90 %) is obtained in the hydration of the 3-methyl-5-phenyl pyrazoline. In the same way as from 5-methyl- also from 3-methyl pyrazoline one and the same 3,5-methyl pyrazole was obtained (75 and 90 %):



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Reaction of Hydrazine Derivatives. XX. Dehydration of Pyrazolines

Four of the synthesized pyrazoles (yield: 65-90 %) have hitherto not been described. The proposed method can be easily employed and may serve as preparatory synthesis of alkyl and aryl pyrazoles. There are 24 references, 9 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: November 2, 1957

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